

REMARKS

Claims 1 - 18 and 27-36 are pending in the application. Claims 1-18 and 27-36 stand rejected. Claims 2, 6, 7, 8, 9, 11, 15, 16, 17 and 18 are amended with this response without adding new matter. Claims 19-26 were previously canceled. Claims 1, 10 and 27-36 are canceled without prejudice. Reconsideration of the application, as amended, is respectfully requested. The Examiner's rejections are addressed in substantially the same order as in the referenced office action.

Claim Objections

The Examiner objects to the wording in claims 6, 9, 15, 18, 31 and 36. Claims 31 and 36 are canceled, and Applicant has amended the remaining claims as suggested by the Examiner in paragraph 4 of the office action.

35 U.S.C. § 112 Rejections

Claims 4, 13, 29 and 34 are rejected under 35 U.S.C. § 112, first paragraph. The Examiner asserts that there is no teaching that the re-entrant grooves are criss-crossed as claimed. Applicant has canceled claims 29 and 34, and Applicant respectfully traverses the rejections with respect to claims 4 and 13.

The specification at page 9, lines 9-10, states "FIG. 18 is a top view of an embodiment of an electrode including a criss-crossing pattern of re-entrant grooves." And at page 45, lines 15-16, the particular criss-crossing pattern of Figure 18 is described as

“the electrode 1800 includes a checkerboard pattern of vertical grooves 1805 and horizontal grooves 1810...” Thus, the checkerboard pattern in Figure 18 is one criss-crossing pattern where the grooves are vertical and horizontal. Similar grooves that do not cross at right angles as shown in figure 18 would still be readily understood by those skilled in the art as forming a criss-crossing pattern, which is claimed. Since the description of figure 18 appearing on page 9 describes the figure as showing a criss-crossing pattern and the detailed description further describes the particular criss-crossing pattern as a checkerboard pattern, Applicant respectfully submits that rejected claims 4 and 13 meet the requirements of 35 U.S.C. § 112.

Claims 1-18 and 27-36 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Claims 27-36 have been canceled.

Regarding rejected claim 1, claim 1 has been canceled and claim 2 is rewritten in independent form taking into consideration the issue raised by the Examiner regarding “the surfaces.” Rewritten claim 2 includes antecedent recitation to surfaces on each electrode.

Claim 6 is amended to clarify that the phrase “the electrodes” refers to whichever electrodes includes the re-entrant openings. As claimed rewritten claim 2, the invention claims an accelerometer where any one, more than one or all electrodes might include re-entrant openings.

Double Patenting

Claims 1-18 and 27-36 stand provisionally rejected under the judicially-created doctrine of obvious-type double patenting as being unpatentable over claims 1, 13, 25 and 37 of copending Application No. 09/886,320. Claims 27-36 have been canceled.

Applicant respectfully requests withdrawal of the rejection because the remaining claims of the present application as amended, when read as a whole, would not be obvious to those skilled in the art in view of the invention claimed in copending Application No. 09/886,320. Each claim in the present application includes the limitation of one or more re-entrant grooves, and the limitation is clearly defined in the application as a groove in an element that is larger toward the element center than at the element surface. The specification goes on to provide the benefit of such a groove in that the narrower cross-section at the electrode surface tends to preserve electrode surface area while the wider cross-section below the electrode surface reduces resistance to fluid flow.

The invention claimed in the co-pending application does not provide support for such a limitation when read in context with the claim as a whole. Therefore, Applicant respectfully submits that the claims in the present application are patentably distinct from the claims in the cited copending application.

35 U.S.C. § 102 Rejections

Claims 1,2,7,8,10,11,16,17,27 and 32 stand rejected under 35 U.S.C. § 102 as being anticipated either by U.S. Patent 4,930,042 (Weigand et al.) or by U.S. Patent 5,652,384 (Henrion et al.) Claims 1, 10, 27 and 32 have been canceled and Applicant respectfully traverses the rejection of the remaining claims.

Neither the apertures 6 described in Henrion nor the openings 24,26 described in Wiegand are re-entrant openings as claimed. The present application on page 43, lines 16-18 states "As used herein, the term re-entrant is defined as any opening or groove in an element that is larger toward the element center than at the element surface." The apertures 6 described in Henrion and the openings 24,26 described in Wiegand are not re-entrant as the term is defined and claimed in the present application. Consequently, the references do not teach each and every element as arranged in the rejected claims. Therefore, Applicant respectfully submits that the claims are not anticipated by either cited reference.

Furthermore, the present application provides the advantages of such re-entrant grooves. The disclosure states beginning at page 44 line 1, "As illustrated in FIGS. 14 and 15, the re-entrant grooves 1405, 1410, 1415, and 1420 have a narrower cross-section at the electrode surfaces and a wider cross section below the electrode surfaces. The narrower cross-section at the electrode surface tends to preserve electrode surface area while the wider cross-section below the electrode surface reduces resistance to fluid flow." The cited references do not teach such re-entrant grooves and do not provide the above-stated advantages with the disclosed structures.

The disclosure at page 44, line 8 addresses particular sizing; "The location and sizing of the grooves 1405, 1410, 1415 and 1420 are preferably designed to minimize the fluid damping of the parallel plate electrodes 705 and 910 and 805 and 915 within the design constraints of the plate surface areas, the electrode gaps, and the total working capacitance. In order to minimize fluid damping with a fixed total electrode surface area, the location and sizing of the grooves 1405, 1410, 1415, and 1420 can be varied."

The Examiner asserts that choosing the dimensions of such a re-entrant groove is merely a design choice within the level of skill in the art. Applicant would respectfully point out that the present disclosure provides stated advantages of a re-entrant groove, which are not suggested in the cited art. Since re-entrant grooves are not taught, and in view of the additional advantages disclosed for re-entrant grooves, Applicant respectfully submits that the use of re-entrant grooves are not a mere design choice.

35 U.S.C. § 103 Rejections

Claims 3-6, 9, 12-15, 18, 28-31 and 33-36 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over either U.S. Patent 4,930,042 (Weigand et al.) or by U.S. Patent 5,652,384 (Henrion et al.) Claims 28-31 and 33-36 have been canceled and Applicant respectfully traverses the rejection of the remaining claims.

Claims 3-6 and 9 depend from amended claim 2 and claims 12-15 and 18 depend from amended claim 11. Independent claims 2 and 11 are each discussed above in detail, and each includes the limitation of one or more re-entrant grooves. The advantages of using such re-entrant grooves are also discussed above. The Examiner's assertion of obvious advantages of using re-entrant grooves cannot be supported by the cited art, because the cited art does not teach re-entrant grooves. Thus, the cited art does not teach each and every limitation of the independent claims from which the rejected claims depend. Therefore, Applicant respectfully submits that claims 3-6, 9, 12-15, and 18 are not obvious over the cited art.

CONCLUSION

For all the foregoing reasons, Applicant respectfully submits that all claims are in a condition for allowance and requests timely issuance of a notice of allowance. A check in the amount of \$930 is submitted herewith for a three-month extension of time for filing this response. No additional fee is believed due for this response. The Commissioner is authorized to charge any additional fee due or refund any overpayment to **Deposit Account No. 13-0010 (IO-1002-US)**.

Respectfully submitted,

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